CLAIMS

1. A method of replicating information between a first and second site using a messaging system comprising the steps of:

maintaining, at said first site, an index of objects currently known to said first site;

maintaining at said first site a message table for communicating to a second site the state of said first site, said first site's message table identifying a plurality of objects contained in said first site's index;

transmitting said first site's message table to said second site;

transmitting to said second site using said messaging system a plurality of messages, each of said plurality of messages containing object information; and

updating said second site's state using said first site's message table and said plurality of messages.

2. The method of claim 1 wherein said step of maintaining said first site's index further comprises the steps of:

maintaining at said first site an object store, said object store containing information for replication;

reading information from said first site's object store;

updating said first site's index to include information obtained from said first site's object store.

updating said first site's message table from said first site's object store and said first site's index.

3. The method of claim 2 wherein said object store is a message store.

4. The method of claim 3 wherein said message store is an e-mail box.

5. The method of claim 2 wherein said object store is a database.

6. The method of claim 1 wherein said first site's index includes an original unique identifier (UID) and a self UID for each object in said first's site's index, said original UID is generated as said each object is created, said self UID is generated as said each object is changed.

7. The method of claim 1 wherein said step of maintaining said first site's message table further comprises the step of copying information associated with all of the objects contained in said first site's index.

8. The method of claim 1 wherein said step of maintaining said first site's message table further comprises the steps of:

reading an object from said first site's message table;

determining whether it is necessary for said first site to notify said second site about said object;

including uncompressed information for said object in said first site's message table if it is determined that said second site is to be notified about said object;

including compressed information for said object in said first site's message table if it is determined that said second site is not to be notified about said object;

determining whether said object should be sent to said second site;

compose a transaction to transmit said object to said second site if said object should be sent to said second site .

9. The method of claim 8 wherein said step of determining whether to notify said second site further comprises the steps of:

determining whether said second site has already been notified regarding said object;

determining whether said object exists.

10. The method of claim 8 wherein said determination steps use a message table transmitted from said second site to determine whether said

second site should be notified about said object and whether said object should be sent to said second site.

11. The method of claim 8 wherein said uncompressed information comprises an original UID for said object, a self UID for said object if said self UID is different than said original UID and a state code for each UID.

12. The method of claim 8 wherein said compressed information comprises an original UID for said object, a self UID for said object if said self UID is different than said original UID and a state code for each UID.

13. The method of claim 12 wherein said compressed information is included as a range with another object's compressed information.

14. The method of claim 1 wherein one or more of said plurality of messages includes a copy of object to be replicated at said second site.

15. The method of claim 1 further comprising the step of maintaining at said second site a copy of said first site's message table.

16. The method of claim 1 wherein said update step further comprising the steps of:

comparing said first site's message table with an index for said second site, said second site's index is an index of objects currently known to said second site;

updating said second site's index to include object information for those objects identified in said first site's message table exists at said second site.

17. A method of transmitting an object from a first site to a second site via a messaging system comprising the steps of:

maintaining, at said first site, transmission characteristics for said second site;

transmitting said object from said first site to said second site;

receiving, at said second site, said object;

determining, at said second site, whether said object is dependent on another object;

determining, at said second site, whether said another object upon which said object depends exists at said second site and that its dependencies have been satisfied when said object is dependent on said another object;

permitting access to said object at said second site when said another object exists at said second site and its dependencies have been satisfied;

denying access to said object at said second site when said another object does not exist;

denying access to said object at said second site when said another object's dependencies have not been satisfied.

18. The method of claim 17 further comprising the steps of:

determining whether said second site needs a copy of said object;

determining whether a third site needs a copy of said object;

creating one message addressed to said second and third sites if said second and third sites need a copy of said object.

19. The method of claim 17 wherein said transmission step further comprising the steps of:

determining a message length for any message to be sent to said second site;

composing a single message when said message does not exceed the message length for said second site;

composing two or more messages when said message does exceed the message length for said second site;

recomposing , at said second site, said two or more messages into a single object independent of the order in which said two or more messages are received at said second site.

20. The method of claim 17 further comprising the step of:

transmitting by said second site a message acknowledging receipt of said object when said object is received by said second site.

21. The method of claim 20 further comprising the steps of:

monitoring by said first site said messages sent by said second site;

determining, using said second site's transmission characteristics, whether an acknowledgment message should have been received from said second site;

transmitting said object when said acknowledgment message was not received within the time indicated by said transmission characteristics.

22. The method of claim 17 further comprising the steps of:

transmitting to said second site an identifier that identifies a predecessor object, said predecessor object being the immediate predecessor to said object based on a numerical sequence known to both sites;

determining, at said second site, whether said predecessor object exists at said second site;

requesting said predecessor object from said first site when said predecessor object does not exist at said second site.